



**Republic of Malawi**



**Blantyre Water Board**



**Blantyre City Council**

## **MALAWI WATER AND SANITATION PROJECT-1**

### **Terms of Reference:**

**TERMS OF REFERENCE FOR CONSULTANCY SERVICES TO  
UNDERTAKE A BASELINE STUDY FOR THE MALAWI  
WATER AND SANITATION PROJECT – 1**

**PROCUREMENT REFERENCE: MW-BWB-333213-CS-OCBS**

**MAY 2023**

# 1. INTRODUCTION

## 1.1 *Background*

The Government of Malawi (GoM) is committed to providing adequate, reliable and sustainable water and sanitation services to the urban, peri-urban, towns and rural population of Malawi to meet the ever-increasing demand for safe water for domestic, institutional, industrial, commercial and agricultural use. One focus area is Blantyre City, which currently faces a number of challenges related to water supply and sanitation services delivery. Some of the challenges include; high population growth, dwindling water resources, climate change, lagging infrastructure development and aging water and sanitation systems with high levels of non-revenue water creating large gaps between supply and demand, leading to unreliable services. The current water and sanitation situation in the city is alarming, which calls for comprehensive measures that will bring about sustainable and reliable improved services.

GoM through Blantyre Water Board (BWB) and Blantyre City Council (BCC) with financial support from the International Development Agency (IDA) of the World Bank intends to implement the Malawi Water and Sanitation Project (MWSP). The MWSP seeks to address the immediate and medium-term water and sanitation needs and support a long-term solution to Blantyre City's growing demand for improved water services and safely managed sanitation services.

BWB and BCC which are the implementing entities for the MWSP commit themselves to successful implementation of the project which aligns with Malawi's development goals as well as strategic plans for the two institutions. The project is consistent with the Government's priorities, as it directly aligns with Malawi's commitment to improving urbanization as stipulated in the Malawi 2063.

## 1.2 *Project Development Objective and Components for the Malawi Water and Sanitation Project (MWSP)*

The project development objective (PDO) is to increase access to improved water supply and sanitation services in Blantyre metropolitan area and to enhance the operational and financial efficiency of the Blantyre Water Board. The PDO will be achieved through development and rehabilitation of water and sanitation infrastructure for Blantyre City and surrounding areas so that the city has adequate and reliable potable water supply with adequate pressure and safely managed improved sanitation services. The project focuses on four components that contribute to the achievement of the PDO.

### *Component 1: Water supply improvements*

Under this component, the project will finance investments to improve water production, stabilize and improve network operational efficiency, reduce water losses, increase energy efficiency,

improve water supply service quality, and expand water access to unserved areas, increasing energy efficiency, and boosting water access.

*Component 2: Priority sanitation investments*

This component involves several interventions to increase access to safely managed sanitation and reduce environmental pollution that has public health impacts.

*Component 3: Institutional capacity strengthening*

This component will finance a set of institutional development activities aimed at enhancing BWB's financial efficiency and governance systems, improving BCC's capacity to manage sanitation services and supporting the water sector investment planning and policy development to enhance the sustainability of urban water services.

*Component 4: Technical Assistance and Project Management Support*

This component will finance TA activities designed to support the project implementing unit and the incremental operating costs for project management, including safeguards, communications, and project monitoring and evaluation. The project will also finance relevant training to enhance financial management, procurement, and safeguards capacity for the implementing entities.

## **2. OVERALL OBJECTIVE OF THE PROPOSED BASELINE STUDY**

The primary objective of the assignment is to prepare a baseline report through collection of primary data on the pre-intervention situation. The baseline is expected to inform project planning and establish benchmarks for assessing the project impact and outcomes at different stages of project implementation. The study will establish a reference point on water supply and sanitation coverage, levels of service, water use patterns and key service delivery gaps. The consultant is expected to provide and /or confirm the baseline information for each of the indicators in the results framework. The information collected should be able to provide a clear picture of the current status of water supply service coverage within Blantyre Water Board supply area, as well as status of sanitation coverage in the project focus area. Data should be georeferenced and disaggregated by age, sex and location.

### **2.1 Specific Objectives**

The specific objectives of the study are:

- i. Assess the existing situation with respect to water supply status services in Blantyre City, including population served, levels of service, reliability and quality of service.
- ii. Assess the demand for water supply services disaggregated per supply zone, including water use patterns, consumption per capita, and average number of people per connection in the BWB supply area.

- iii. Establish the state of sewerage services, including coverage, service quality and key service delivery challenges; and the demand for waterborne sewerage services disaggregated per administrative area.
- iv. Assess the existing situation with respect to sanitation<sup>1</sup> conditions and the sanitation chain in the city of Blantyre including average number of users per sewer connection and onsite sanitation systems per area/ ward/ compound as relevant, gaps and needs in existing sanitation access and facilities, identify factors that hinder access to improved sanitation; and identify residents' knowledge, attitudes practices and expectations regarding sanitation services.
- v. Analyze the balance between affordability to consumers, Willingness To Pay (WTP), and service options for both water supply and sanitation services. A WTP study with respect to water and sanitation services should likely estimate household income and broad expense levels and categories, identify current patterns of household expenditure on sanitation, and identify potential levels of water and sanitation services, and estimate households' willingness and ability to pay for different levels of water and sanitation services.
- vi. Establish a demographic, social-economic, and health baseline of the populations residing in the targeted geographic area.
- vii. Understand the behaviors at the household level to identify the constraints as well as the opportunities to change household behaviors and encourage the use of both water supply and sanitation services.
- viii. Establishing a GIS-based mapping and baseline data of the above demographic, socio-economic, and health statistics as well as sanitation conditions, and water sources to form basis for the monitoring of project impacts over time.

### **3. SCOPE AND COVERAGE**

The study will cover the entire water supply area of BWB, including the proposed network expansion areas under the project namely Njuli, Chileka, Chikuli, Mpemba, and Matindi. The study will assess water supply and sanitation services status and demand pattern; socio-economic status of households; levels and quality of services, including users' perceptions, and behaviours and preferences. In order to carry out the assignment, the consultants should use a variety of methodologies, including: reviewing existing data from national and local authorities, reviewing recent poverty map and poverty analysis, reviewing BWB and BCC information, reviewing health information systems data, conducting household surveys (to collect baseline data for project monitoring), conducting focus groups and key informant interviews (including with local authorities and community and civil society organizations), and direct field observations. The consultants will use satellite images and aerial photography to identify project areas, locate the key water supply and sanitation facilities.

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<sup>1</sup> Sanitation in these TORs refers to solid and liquid waste management from containment to collection, transport, treatment, and final disposal.

The scope of the assessment shall include but not be limited to the following, and should be disaggregated per water supply zone for water and administrative area for sanitation:

### **3.1 Demographic, Socioeconomic, Health, and Nutrition Baseline**

- i. Population and demographic characteristics of residents, including but not limited to:
  - a. Population distribution, demographic profile of settlements and households, migration pattern, length of residence, etc.
  - b. Population, disaggregated by gender and economic status.
  - c. Population disaggregated by landlords and tenants.
  - d. Households and household composition.
  - e. Population growth rate.
- ii. Community livelihood profiles, welfare health services access and hygiene characteristics of households in the target areas:
  - a. Employment status.
  - b. House ownership.
  - c. Income and income streams.
  - d. Education profile.
  - e. Incidence of water borne and water related diseases per geographical area and wealth profile.
  - f. Perceptions of the importance of water and sanitation in the community.
  - g. Barriers to accessing water supply services and improved sanitation.
  - h. Willingness to pay for water and sanitation services
- iii. Household health, nutrition, and hygiene characteristics, including, but not limited to:
  - a. Number of adults and children.
  - b. Incidence and prevalence of diarrhea in children under five years in the last thirty days.
  - c. Sources of drinking and washing, bathing water.
  - d. Seasonality of diarrhea in the household.
  - e. Ever diagnosed with other water-related diseases? (list them in survey with local names).
  - f. Knowledge of community/community leaders on causes of diarrhea and other waterborne diseases.
  - g. Determine the level of understanding of the risks that the project would bring such as HIV and AIDS and human trafficking, among several others.

### **3.2 Water Supply Status in Blantyre Water Board Supply Area**

- i. Access to water supply services (standpipes, kiosks, neighbour tap, individual connections and others), including coverage, household consumption and number of people per connection.

- ii. Average hours of water supply (average daily water supply duration at the supply point per DMA and zone).
- iii. Average water pressure at the supply point per DMA and zone.
- iv. Average non-revenue water level for each DMA.
- v. Water quality - the number of tests carried out (bacteriological and chlorine residual to be done by the consultant) and the percentage of results meeting WHO guidelines for water quality.
- vi. Percentage of metered and billed connections.
- vii. Distance to safe water source.
- viii. Average number of faults
- ix. Average response time to faults and leakages
- x. Extent of borehole proliferation in the supply area and availability of borehole licences
- xi. Consumer satisfaction.
- xii. Water saving and conservation practices at the household level.
- xiii. Analyze the balance between affordability to consumers, willingness to pay for water consumption and for connection.
- xiv. Medium and long term economic implication of prepaid metering system versus post-paid metering system.
- xv. Establish baseline data for all the indicators in the result framework under water supply component.

### **3.3 Sanitation Status in Blantyre City**

- i. Access to sanitation services and hygiene facilities focusing on the whole sanitation service chain (from containment, collection to transportation, treatment, disposal, reuse and perception of disposal), including different options used.
- ii. Access to solid waste management services and current disposal practices.
- iii. Identifying and describing sanitation facilities (public and private) and practices in the target areas, including operations and management of public facilities and the maintenance of private/household facilities.
- iv. Sanitation Status:
  - a. Understand the sanitation and hygiene behaviors at the household and community level to identify the constraints as well as the opportunities to change household behaviors and encourage the use of improved sanitation facilities.
  - b. Percentage of public places equipped with adequate sanitation facilities, including gender needs, according to the national standards (schools, health centers, markets, churches, restaurants, etc)
  - c. Existing sanitation and hygiene promotion approaches and activities, and its effectiveness.
- v. Assess the demand for sanitation services (on-site and off-site) from households, and

- propose measures to increase demand.
- vi. Analyze the balance between affordability to consumers and willingness to pay for water consumption and connection and sanitation services.
- vii. Assess the level of readiness of the communities to the project deliverables by engaging in some focus groups regarding expectations about the project.
- viii. Identify private sector engagement opportunities along the sanitation service chain.
- ix. Establish baseline data for all the indicators in the result framework under sanitation component

### **3.4 Assess the knowledge, attitudes, practices, and incentives (explicit and implicit) regarding personal sanitation, basic hygiene, and use of non-piped water sources**

- iv. Knowledge of the impact of the lack of improved sanitation.
- v. Knowledge of causes of diarrhea.
- vi. Knowledge of hygiene practices in the household, specially hand washing.
- vii. Observation of cleanliness of plot, household, latrine used, around the house and plot, presence of feces in house, plot perimeter or immediately outside.
- viii. Identify groups and individuals who are excluded from water supply and sanitation services, and reasons for the exclusion.
- ix. Identify and describe existing water supply and sanitation programs in the target areas, if any, including community-engagement initiatives or activities undertaken, whether by local community groups or outside NGOs.
- x. Analysis the gender dynamic in relation to water supply and sanitation, service level, willingness to pay, and behavior change.

### **3.5 GIS based Mapping of Sanitation Facilities and Conditions and Baseline Demographic, Socio-Economic, and Health Information**

The consultants will be expected to develop, for BWB and BCC's (and other stakeholders') use a GIS-based maps of conditions and data collected and analyzed through this study. The resulting maps would be used for strategic and operational planning and during the implementation of the project. Therefore. BWB and BCC will need to be trained in the use of the map and its interfaces.

### **3.6 Key Performance Indicators (KPI)**

The consultant is also expected to provide and /or confirm the baseline information for all the indicators in the project's results framework including;

- i. Indicators for institutional capacity strengthening for BWB, BCC and sector ministry.
- ii. Indicators for social, environmental, health and safety for MWSP, BWB and BCC.
- iii. Indicators for citizen engagement, customer relations and sanitation marketing for BWB and BCC.

#### **4. POSSIBLE WAYS OF UNDERTAKING THE ASSIGNMENT**

The consultant should collect a comprehensive set of data as per information needs described above. Where data availability is limited, the consultant should combine different techniques to ensure an informed conclusion of the situation, including tapping into the implicit knowledge of local experts and communities, using local data from routine information systems and recent studies.

Whenever available the consultants will use satellite images and aerial photography to identify project areas, locate sanitation facilities, water supply sources. The consultants will need to work closely with staff of BWB and BCC, in particular the Project Implementation Units as well as to liaise closely with consultants engaged in other aspects of project identification and preparation.

It is suggested that the consultants use a mix of the following methods (however, the **consultant** may suggest other methods and/or data sources which can enrich the deliverables of the consultancy):

- i. Review the existing data from the National Statistics Office (NSO) and other authorized sources of information at national and local level, including poverty maps and poverty analyses.
- ii. Review BWB customers' database and BCC existing data and plans for sanitation improvements and related services.
- iii. Review of existing documents and outputs from routine data systems such as health information and surveillance systems, environmental information systems, water quality information systems and wastewater disposal information systems.
- iv. Conduct georeferenced household surveys on health, environmental, water quality and waste disposal in the project areas. The sampling methodology and final sample shall be agreed with BWB and BCC.
- v. Focus groups and key informant interviews with all the institutions mentioned in current TORs plus community water user associations, community and civil society institutions, and water and sanitation services users and non-users.
- vi. Direct field observations to validate data collected by the two methods described above and complete data gaps.
- vii. Uses GIS methodology to enter data in a way that is geographically easy to use and that BWB and BCC can use to update its database.
- viii. Uses satellite and aerial photography to identify areas with potential issues and to discuss with communities and community key informants.

The Consultants are expected to coordinate and harmonize with other ongoing program preparation activities—in particular the consultants working on the feasibility study.

#### **5 FIRM EXPERIENCE AND EXPERIENCE AND QUALIFICATIONS OF KEY STAFF PROPOSED TO UNDERTAKE THIS ASSIGNMENT**

The consulting firm and team must have and demonstrate the requisite skills and experience necessary to undertake the range of tasks set out in these Terms of Reference. The key staff should



include individuals with education and experience and ability to design and manage household surveys in Blantyre, experience in assessing and analysing household incomes and expenditures, including willingness-to-pay assessments, and individuals with the technical skills necessary to produce a GIS-based map of sanitation and socio-economic characteristics of the target areas.

### 5.1 Team Composition

The Consultant must be familiar with national and international water and sanitation policies. To adequately address the core issues of the study, it is advisable that the team should at least be composed of the following key personnel:

- i. **Team Leader**, with at least a Master of Science in Water Engineering with at least 10 years' experience in conducting baseline surveys for water and sanitation projects. S/he should have proven knowledge and experience in urban water and sewerage systems. S/he should have experience in working in sub-Saharan region. S/he should be fluent in English.
- ii. **Social Development Specialist** with at least a Master's Degree in Demography, Sociology, Economics or other relevant field and at least 7 years' experience in conducting **baseline** surveys for water and sanitation projects. S/he should have proven knowledge and experience in community mobilization and gender advocacy. S/he should have experience in working in sub-Saharan region. S/he should be fluent in English.
- iii. **Water, Sanitation and Health Specialist** with at least a Master of Science in Public Health Engineering, Master of Science in Water, Sanitation and Health Engineering or other related field and at least 7 years' experience in conducting baseline surveys for water and sanitation projects. S/he should have proven knowledge and experience in data collection and analysis for baseline surveys. S/he should have experience in working in sub-Saharan region. S/he should be fluent in English.
- iv. **Statistician/ Data Analyst** with at least a Master's Degree in Mathematics/Statistics and at least 7 years' experience in conducting baseline surveys for water and sanitation projects. S/he should have proven knowledge and experience in data collection and analysis for baseline surveys. S/he should have experience in working in sub-Saharan region. S/he should be fluent in English.
- v. **GIS Specialist** with at least a Bachelor's Degree in GIS, Geoinformatics or other related field and at least 7 years' experience in development of GIS databases resulting from socio-economic surveys.
- vi. **Field coordinator** - Bachelor's degree in Statistics, Demography, Sociology or other related qualifications with at least 3 years' experience in community development, survey development and management.

The level of effort of professional staff to be provided by the consultant is estimated 18 staff months as per table below:

<b>Item</b>	<b>Team Member</b>	<b>Input/Staff-Months</b>
1.	Team Leader	5
2.	Social Development Specialist	3
3.	Water, Sanitation and Health Specialist	3
4.	Statistician/Data Analyst	3
5.	GIS Specialist	2
6.	Field Coordinator	2
<b>Total</b>		<b>18</b>

## **6 TIME SCHEDULE AND REPORTING REQUIREMENTS**

### **6.1 Assignment Duration**

The Consultant shall submit a programme which shall be adopted in consultation with the client. The maximum number of staff months for the assignment is eighteen (18). The expected period for the assignments is 5 months as shown in table below;

<b>Item</b>	<b>Activity</b>	<b>Calendar Months</b>
1.	Inception Report	0.75 after commencement
2.	Draft Baseline Survey Report	3.50 after commencement
3.	GIS Based Map of the Baseline Conditions	5.00 after commencement
4.	Final Baseline Survey Report	6.00 after commencement

## **6.2 Reports**

The Consultant will be required to prepare reports during the assignment. All reports will be in English language and all quantities expressed in metric units. The consultant shall prepare and submit to the client the following reports;

### **a) Inception Report which will include**

- i. Understanding of ToRs and key issues for the completion of the assignment.
- ii. Approach and methodology, including sample frame.
- iii. Detailed work plan/timeline.
- iv. Draft household questionnaire.
- v. Draft questionnaire for KPIs baseline data collection.

This report shall be prepared and submitted in ten (10) hard and one (1) electronic copy.

### **b) Draft Baseline Survey Report**

The report shall be prepared and submitted in ten (10) hard and one (1) electronic copy. Contents of the report shall include the following:

- i. The current status of water supply and sanitation service delivery in Blantyre metropolitan area that would form the baseline data for monitoring the impact of various interventions under the project.
- ii. The study is expected to provide data, information and insights into aspects of the water supply and sanitation use along the following lines:
  - a. Housing environment profile.
  - b. Household socio-economic situation.
  - c. Level of access to potable water and sanitation services in Blantyre metropolitan area.
  - d. Level of water supply and sanitation coverage.
  - e. Water amenities and service situation.
- iii. GIS-based map of water supply and sanitation facilities and socio-economic baseline.
- iv. The report should include a section on the project's results framework with verified baseline data for all indicators.

### **c) Final Baseline Report**

The report shall cover all aspects in the scope and will be submitted, reviewed and approved by the client before acceptance. This report shall be submitted in ten (10) hard and one (1) electronic copy.

## **7 PAYMENT SCHEDULE**

Payments under the assignment shall be based on approved deliverables. Table below shows the expected payment schedule (subject to negotiation with winning consultant).

## Payment Schedule

Number	Deliverable	Proportion of payment (%)
1	Inception Report	10%
2	Draft Baseline Survey Report and Results Framework	30%
3	GIS Based Map of the Baseline Conditions	25%
4	Final Baseline Survey Report	35%
		<b>100%</b>

## 5 RESULTS DISSEMINATION

The BWB and BCC will be responsible for the dissemination of the results. The results will be integrated into the Malawi Water and Sanitation Project (MWSP) monitoring and evaluation plan.

## 6 CONTRACT MANAGEMENT

### 6.1 Obligation of the Consultant

- i. The Consultant shall be responsible for the payment of local taxes and duties for all goods and services including levies during execution of the project.
- ii. The Consultant is expected to be fully self- sufficient in terms of accommodation, office supplies, and office equipment.
- iii. The data, documentation and assets from the consultancy will remain the property and in the custody of the Client at the end of the consultancy.
- iv. The Consultant shall be available, at all times, for subsequent discussions of the assignment with the Client. The Consultant shall be responsible for the payment of local taxes and duties for all goods and services including applicable levies, during execution of the project.

### 6.2 Obligation of the Client

The Client shall, wherever possible:

- i. Assist the Consultant in obtaining information and data to enable the Consultant to execute the services described herein effectively. However, the Consultant shall be solely responsible for analysis and interpretation of all data and from his findings, making appropriate conclusion and recommendations.
- ii. Provide copies of available study reports and other relevant documents.
- iii. Ensure that the Consultant has access to all available information required for timely execution of the assignment.

- iv. Assist the consultant to obtain necessary immigration, VISAs, registration with any board or agency, and residence work permits for the approved expatriate personnel and their dependants. However, the consultant remains responsible for this

### **6.3 Reporting Arrangements Reviews and Schedule of Deliverables**

Blantyre Water Board, with support from Blantyre City Council, will be the implementing agency for the execution of this assignment. The Consultant will be reporting to the PIU Manager on contractual matters and to the Monitoring and Evaluation Specialist at Project Implementation Unit (PIU) and Monitoring and Evaluation Officer at Project Support Team (PST) on daily operational issues. The Consultant will be required to submit all the reports to Project Implementation Unit, with copies to BCC as per the specified timelines.